

REMARKS

Reconsideration of this application as amended is respectfully requested.

In the Office Action, claims 1, 4-7, 10-12, 14, 15, and 17-20 were pending and rejected. In this response, no claim has been canceled. Claims 1, 4-7, 11-12, 15, 17, and 19-20 have been amended to particularly point out and distinctly claim, in full, clear, concise, and exact terms, the subject matter which Applicant regards as his invention. The support of the foregoing amendments can be found throughout the specification, such as, for example, pages 16-18 of the specification of the present application. No new matter has been added.

Claims 4, 5, 11, 15, 17, 19, and 20 are objected to because of informalities. Claim 19 is rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. In view of the foregoing amendments, it is respectfully submitted that the above objection and the rejection have been overcome.

Claims 1, 4-7, 10-12, 14, 15, and 17-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bolosky et al., U.S. Patent Application Publication No. 2002/0194209 (hereafter “Bolosky”), in view of Hatstrup et al., U.S. Patent Application Publication No. 2004/0243643 (hereafter “Hatstrup”).

In view of the foregoing amendments, it is respectfully submitted that the present invention as claimed includes a limitation that is not disclosed or suggested by Bolosky and Hatstrup. Specifically, for example, independent claim 1 as amended recites:

1. A computer implemented method for storing data comprising:
receiving a composite data stream from a server;
storing the received composite data stream so that it may be restored to the server, said storing including,
decomposing the composite data stream into a plurality of
constituent data streams, the plurality of
constituent data streams including at least a first

constituent data stream of user data and a second constituent data stream of administrative data, wherein the composite data stream is further sectioned into one or more sections, each including data from both the first and second constituent data streams, and wherein said decomposing includes, storing a composite data stream map that indicates how to recompose the plurality of constituent data streams into the composite data stream, wherein the composite data stream map includes a map header and one or more map blocks, each map block corresponding to a section, wherein the map header includes a composite data stream identifier for identifying the associated composite data stream, a total number of constituent data streams associated with the composite data stream, and a constituent data stream identifier for identifying each of the constituent data streams, and wherein each map block includes information identifying a location of each of the identified constituent data streams; segmenting at least one of the plurality of constituent data streams decomposed from the composite data stream; determining which segments resulting from the segmenting match segments already stored; in lieu of storing those of the segments resulting from the segmenting which are determined to match already stored segments, storing pointers to those already stored segments; and storing those of the segments resulting from the segmenting determined not to match already stored segments.

(Emphasis added)

Independent claim 1 as amended is related to a storage system for storing a composite data stream in a server by decomposing it into multiple constituent data streams. Each constituent data stream is then segmented into multiple segments. Only those segments that have not been stored in the server previously are stored in the server; otherwise, pointers referencing those already stored segments are stored. In addition, a composite data stream map is maintained, where the composite data stream map is used to indicate how to

recompose the plurality of constituent data streams into the composite data stream. It is respectfully submitted that these limitations are absent from Bolosky and Hatstrup, individually or in combination.

Bolosky is related to a file format for a serverless distributed file system. Although Bolosky mentions a single instance store (SIS) system from Microsoft; however, there is little description regarding details of how the SIS system works (see e.g., paragraph [0004] of Bolosky). It is respectfully submitted that Bolosky fails to disclose a specific way for storing a composite data stream set forth above.

Although the Office Action acknowledged that Bolosky fails to disclose a composite data stream map for indicating how to recompose the plurality of constituent data streams into the composite data stream; however, the Office Action contended that the format rules of Hatstrup read on this limitation. Applicant respectfully disagrees.

Hatstrup is related to a method for managing and formatting data in an autonomous data transfer operations, instead of a storage or backup system as claimed in the present application. The format rules of Hatstrup are not used to indicate how to recompose the plurality of constituent data streams into the composite data stream.

Specifically, Hatstrup states:

The formatting rules determine how autonomous operation instructions are organized within the third location 220. The formatting rules direct the assembler 218 to select either autonomous operation instructions for data in the first location 212 or autonomous operation instructions for metadata in the second location 214. The formatting rules are preferably pre-defined and formulated to result in a specific format for the data and metadata following the autonomous operation.

(Hatstrup, paragraph [0004], Emphasis added)

Thus, the formatting rules of Hatstrup are used to determine how the instructions (rather than data) are organized. It is respectfully submitted that the formatting rules of

Hatrup are not used to indicate how to recompose the plurality of constituent data streams into the composite data stream.

Even if, for the sake of arguments, the formatting rules of Hatrup somehow read on the composite data stream map as claimed, it is respectfully submitted that Hatrup fails to disclose a specific format of the composite data stream map.

Specifically, Hatrup fails to disclose that a composite data stream map includes a map header and one or more map blocks, where each map block corresponds to a specific section. Hatrup further fails to disclose that the map header includes a composite data stream identifier for identifying the associated composite data stream, a total number of constituent data streams associated with the composite data stream, and a constituent data stream identifier for identifying each of the constituent data streams. Each map block includes information identifying a location of each of the identified constituent data streams.

Furthermore, there is no suggestion within Bolosky and Hatrup to combine with each other. Here, Bolosky is related to a file format for a serverless distributed file system, while Hatrup is related to autonomous third party data transfers. Thus, Bolosky and Hatrup are related to completely different fields. They are solving significantly different problems and their approaches are significantly different. It is respectfully submitted that one with ordinary skill in the art, based on the teachings of Bolosky and Hatrup, would not combine these two references because there is no reasonable expectation of success. Any suggestion to combine Bolosky and Hatrup can only be based on the impermissible hindsight of the present application. Even if they were combined, such a combination still lacks the limitations set forth above.

Therefore, for reasons set forth above, it is respectfully submitted that independent claim 1 is patentable over Bolosky and Hatrup.

Similarly, independent claims 7, 12, and 15 include limitations similar to those recited in claim 1. Thus, for the reasons similar to those discussed above, independent claims 7, 12, and 15 are patentable over Bolosky and Hatstrup.

Given that the rest of the claims depend from one of the above independent claims, at least for the reasons similar to those discussed above, it is respectfully submitted that the rest of the claims are patentable over Bolosky and Hatstrup.

Furthermore, with respect to claims 5-6 as amended, these claims are related to a further specific format of a composite data stream map. Specifically, as recited in the amended claim 5, a composite data stream map further includes a composite offset and a constituent data stream offset for each constituent data stream. The composite offset specifies an offset in the composite data stream from which a starting data stream block of data to be recomposed from the constituent data streams identified by corresponding constituent data stream offsets. Each constituent data stream offset indicates an offset in a corresponding constituent data stream from which the starting data stream block of data is to be recomposed. It is respectfully submitted that these limitations are absent from Bolosky and Hatstrup.

In addition, as recited in the amended claim 6, a map block of the composite data stream map further includes a list of one or more composite data stream descriptors, each corresponding to a data stream block to be recomposed for the composite data stream. Each composite data stream descriptor includes an identifier identifying a constituent data stream corresponding to a next data stream block and a length specifying a length of the next data stream block in an order. Each composite data stream descriptor indicates, in order, how much of which constituent data stream to take next to recompose the composite data stream. It is respectfully submitted that these limitations are also absent from Bolosky and Hatstrup.

Therefore, in addition to those with respect to their base claim, it is respectfully submitted that claims 5-6 are independently patentable over Bolosky and Hattrup.

Withdrawal of the rejections is respectfully requested.

In view of the foregoing, Applicant respectfully submits the present application is now in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call/email the undersigned attorney.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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/Kevin G. Shao/

Kevin G. Shao
Attorney for Applicant
Reg. No. 45,095
Kevin_Shao@bstz.com

1279 Oakmead Parkway
Sunnyvale, California 94085-4040
(408) 720-8300